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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,833	03/10/2004	Nobuhiko Mori	791_236	5650
25191	7590	05/01/2006	EXAMINER	
BURR & BROWN			FERGUSON, LAWRENCE D	
PO BOX 7068			ART UNIT	
SYRACUSE, NY 13261-7068			PAPER NUMBER	

1774

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,833

Applicant(s)

MORI ET AL.

Examiner

Lawrence D. Ferguson

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) 6-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's election of Claims 1-5 and 8 in the reply filed on February 14, 2006 is acknowledged. Claims 1-8 were amended and claim 9 was added rendering claims 1-9 pending in this case, with claims 6-7 withdrawn as a non-elected invention. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The requirement is deemed proper and is therefore made **FINAL**.

Obvious Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-5 and 8-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,936,560. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both include a laminated zeolite composite, characterized in that it comprises a MFI membrane formed on a porous substrate having a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio of 40 to 100. Regarding newly added claim 9, the limitation "wherein said MFI type zeolite of said membrane has a $\text{Na}_2\text{O}/\text{Al}_2\text{O}_3$ (molar ratio) of 15 or less" is interpreted as being zero.

U.S. Patent No. 6,936,560 does not show that the laminated zeolite composite has a thickness as in instant claim 2. However, such features are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the thickness, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. thickness) fails to render claims patentable in the absence of unexpected results. The thickness is optimizable as it directly affects the durability and flexibility of the composite. It would have been obvious to one of ordinary skill in the art to make the composite with the limitations of the thickness since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980). In instant claims 4 and 5, the

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phrases, "which is used for separation of butane isomers" and "is used for separation of propane and propylene" are intended uses which are given little patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Because U.S. Patent No. 6,936,560 has a laminated zeolite composite having an MFI membrane with equivalent materials as the claimed invention, it would have been obvious to one of ordinary skill in the art for the MFI membrane to decrease gradually from one side of the membrane contacting the porous substrate toward the other.

Claim Rejections – 35 USC § 103(a)

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. (U.S. 6,037,292).

Lai discloses a first and second zeolite layer, which are porous and in contact with each other, where the composition may contain a porous substrate in contact with one of the zeolite layers (column 2, lines 1-47). Lai further discloses the thickness of the zeolite layers is within the range of 0.1 to 150um (column 3, lines 35-37). The reference discloses MFI zeolites (column 3, lines 58-65) where the composition comprises Al_2O_3 , Na_2O and SiO_2 (column 8, lines 13-20). Regarding newly added claim 9, the limitation “wherein said MFI type zeolite of said membrane has a $\text{Na}_2\text{O}/\text{Al}_2\text{O}_3$ (molar ratio) of 15 or less” is interpreted as being zero. Lai does not explicitly disclose the silica to alumina molar ratio or the sodium to alumina molar ratio. However, such features are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the silica to alumina molar ratio and sodium to alumina molar ratio, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. molar ratio) fails to render claims patentable in the absence of unexpected results. The thickness is optimizable as it directly affects the durability and flexibility of the composite. It would have been obvious to one of ordinary skill in the art to make the composite with the limitations of the silica to alumina molar ratio and sodium to alumina molar ratio since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980). In instant claims 4 and 5, the phrases, “which is used for separation of butane isomers” and “is used for separation of propane and propylene” are intended uses which are given little

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patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Because Lai has a laminated zeolite composite having an MFI membrane with equivalent materials as the claimed invention, it would have been obvious to one of ordinary skill in the art for the MFI membrane to decrease gradually from one side of the membrane contacting the porous substrate toward the other.

Response to Arguments

6. Applicant's remarks of rejection based on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,936,560 have been considered but are unpersuasive. Applicant argues the '560 patent does not recite anything about the $\text{SiO}_2/\text{Al}_2\text{O}_3$ (molar ratio) of the separation membrane as presently claimed. Patent '560 teaches the zeolite constituting the separation membrane and the zeolite constituting the porous substrate are the same. Because the zeolite of both layers are the same and Patent '560 teaches the zeolite constituting the porous substrate has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio of 40 to 100, the zeolite constituting the separation membrane also has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio of 40 to 100.

Applicant's remarks of rejection made under 35 USC 103(a) as being unpatentable over Lai et al. (U.S. 6,037,292) have been considered but are unpersuasive. Applicant argues there is no disclosure or suggestion in Lai that the $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio are result effective parameters. Simply the incorporation of SiO_2 and Al_2O_3 renders result effectiveness on the composition by changing the intermolecular properties of the composition. Applicant further argues the specification shows unexpected results in Table 3. This argument is well taken; however, Applicant offers no showing that Lai cannot exhibit the same features (molar ratio). Since Lai has the same components as Applicant, these features (molar ratio) would be expected.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



L. Ferguson
Patent Examiner
AU 1774



RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 4/28/06